

REMARKS

In this Amendment, Applicant has cancelled Claim 6 without prejudice or disclaimer; amended Claims 1 – 5, 7 – 15 to overcome the rejections and further specify the embodiments of the present invention; and added new Claims 16 – 17. In addition, the specification has been amended to correct certain informalities. It is respectfully submitted that no new matter has been introduced by the amended claims and specification. All claims are now present for examination and favorable reconsideration is respectfully requested in view of the preceding amendments and the following comments.

SPECIFICATION OBJECTION:

The specification has been objected as containing informalities.

It is submitted that the informalities pointed out by the Examiner have been corrected. More specifically, reference numerals “14”, “114” and “214” have been added after “impressions” at various parts of the specification, respectively. It is clear that the reference numerals “14”, “114” and “214” refer to either the impression or molding chambers.

Therefore, the objection to specification has been overcome and withdrawal of objection is respectfully requested.

REJECTIONS UNDER 35 U.S.C. § 102:

Claims 1 – 5, 7 and 13 – 15 have been rejected under 35 U.S.C. § 102 (b) as allegedly being anticipated by Taylor (US Patent 4,089,926), hereinafter Taylor.

Applicant traverses the rejection and respectfully submits that the presently claimed invention is not anticipated by the cited reference. It is respectfully submitted

that Claims 1 – 5, 7 and 13 – 15 as amended discloses an injection molding system that concerns a mold of the type with a first mold portion containing the first sections of the rubber feeding channels and a second mold portion containing the end sections of the feeding channels and the molding chambers. More specifically, the embodiments of the present invention as amended relates to a mold of the type with a heated plate-like element which is inserted between the first and second mold portions after rubber injection, so as to bring the mold portion containing the molding chambers to the vulcanization temperature (see page 2, line 28 to page 3, line 16). A layer of insulating material is usually placed in this intermediate plate-like element between the heating resistance and the surface of the plate-like element designed to get in contact with the first mold portion, so as to prevent this side of the plate-like element from reaching a temperature causing undesired vulcanization of the rubber contained in the feeding channels in the first mold portion.

The Taylor reference is mention in the instant application (page 3, lines 17-22) as an example of these molds, wherein efficiency of the thermal insulation towards the first mold portion 42 has been improved by means of cooling channels 83a placed between the heating resistance 87 and the insulating layer 82, so as to absorb some heat before it reaches the insulating layer. In other words, the channels 83a are active insulating means.

This solution provides a better hindrance to heat passage from the heating resistance 87 towards the first mold portion 42. However, it certainly does not allow any actual positive control of the temperature of the upper surface of the intermediate element. In other words, one cannot know the actual temperature in the terminal region of the rubber feeding channels in the first mold portion 42 when said first mold portion is closed on the intermediate element.

According to the claimed invention as amended, an innovative solution has been devised wherein thermoregulating means 25, 125, 225 are arranged in a thermally conductive part of the heated intermediate element 21, 121, 221 having surface 23, 123,

223 coming into contact with the first mold portion 16, 116, 216 containing the first sections 17, 117, 217 of the rubber feeding channels. Of course, an insulating layer 27, 127, 227 can be advantageously provided between the part having the heating means 26, 126, 226 and the part having thermoregulating means 25, 125, 225 in order to improve efficiency.

In other words, the core of the claimed invention is that a thermoregulating means (advantageously a thermoregulating fluid) is present in a part of the intermediate element 21, 121, 221 near its rear surface 23, 123, 223, *i.e.*, a means whose temperature is controlled. In this manner, the temperature can be kept within a predetermined and appropriate range suitable to maintain the surface 23, 123, 223 of element 21, 121, 221 within a predetermined temperature range under the vulcanization temperature but sufficiently close thereto. It is important to emphasize that this means 25, 125, 225 is not a means for carrying out a mere and indiscriminate cooling or a thermal insulation, but it is an active thermoregulating means to control the temperature of surface 23, 123, 223 and maintain it within said predetermined range (see page 9, line 22 to page 10, line 3).

It is apparent that the arrangement disclosed by Taylor cannot be intended as a thermoregulating means as explained above, because the cooling channels 83a are separated from the rear surface 81 by means of the insulating layer 82 interposed between the cooling channels 83a and the surface 81 themselves. In fact, the actual temperature of surface 81 cannot be known nor positively controlled. If the insulating characteristic of the insulating layer is excellent, the temperature of surface 81 is independent of the fluid in channels 83a.

Therefore, Taylor cannot give any useful teachings to a person of ordinary skill in the art in order to devise a mold with thermoregulating means in the heated intermediate element, keeping its surface coming into contact with the first mold portion at a temperature suitable to avoid vulcanization of the material in the first channel sections, as recited by Claim 1 of the instant application.

The intermediate element of the mold disclosed by Taylor is similar only to the lower part of the intermediate element 21, 121, 221 of the claimed invention, since the insulating layer 82 and the cooling channels 83a of Taylor actually correspond to the insulating layer 27, 127, 227 of the mold according to the claimed invention. In other words, a plate with thermoregulating means must be added on the upper part of the intermediate element of Taylor to obtain the intermediate element according to the claimed invention. No prior art document suggests to devise this solution.

Therefore, the newly presented claims are not anticipated by Taylor and the rejection under 35 U.S.C. § 102 (b) has been overcome. Accordingly, withdrawal of the rejection under 35 U.S.C. § 102 (b) is respectfully requested.

REJECTIONS UNDER 35 U.S.C. § 103:

Claim 6 has been rejected under 35 U.S.C. § 103 (a) as allegedly being unpatentable over Taylor in view of Fazekas et al. (US Patent 3,876,356), hereinafter Fazekas; Claims 8 – 12 have been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Taylor in view of German Patent 3122566, hereinafter German ‘566 patent.

Applicant traverses the rejection and respectfully submits that the embodiments of present-claimed invention are not obvious over Taylor in view of Fazekas or German ‘566 patent. At first, Claim 6 has been cancelled. The rejection to Claim 6 is moot. In addition, Claims 8 – 12 have been amended. The differences between the embodiments of the present invention and Taylor have been stated above. In addition, Fazekas is not relevant to the claimed invention as defined in the amended Claims 8 – 12 because it relates to a different molding press, *i.e.*, a molding press without heated intermediate element inserted between the upper and lower mold portions after rubber injection. As a matter of fact, as clearly disclosed at column 3, lines 49-53, the element 60 designed to heat the rubber to the vulcanization temperature is attached fixedly to the upper mold portion 30 and is passed through by the rubber feeding channels 100 arranged inside

inserts 90. Substantially, the molding press disclosed by Fazekas could be compared to the prior art discussed on page 2, lines 10-15 of the present application, wherein the rubber feeding channels are designed to pass through the insulating layer separating the "hot" region from the "cold" region. Therefore, there is no motivation or suggestion to combine Taylor with Fazekas and German '566 patent to achieve the present invention. Even if they are combined, a person of ordinary skill in the art will not discern the present invention at time of its invention.

Therefore, the newly presented claims are not obvious over Taylor in view of Fazekas or German '566 patent and the rejection under 35 U.S.C. § 103 has been overcome. Accordingly, withdrawal of the rejections under 35 U.S.C. § 103 is respectfully requested.

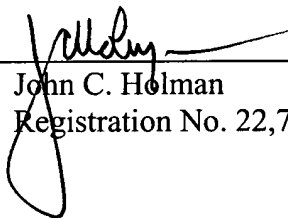
Having overcome all outstanding grounds of rejection, the application is now in condition for allowance, and prompt action toward that end is respectfully solicited.

Respectfully submitted,

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